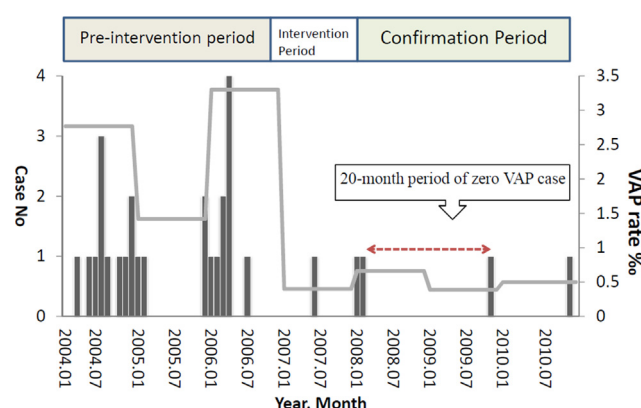


cases of VAP. A record of 20-month period of zero VAP case from March 2008 to October 2009 had achieved.



Conclusions: Our experience has shown that the implementation of VAP bundle, can be effective in reducing ventilator-associated pneumonia occurred.

PS 1-110

EFFECTIVENESS ANALYSIS OF CROSS-FUNCTIONAL TEAM TO IMPLEMENT CENTRAL VENOUS CATHETER CARE BUNDLE

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Purpose: Central venous catheterization has become the most important treatment in modern clinical medicine; however, the incidence of central line-associated bloodstream infection (CLABSI) might increase if strict sterile precautions were not followed. Hence, many countries are implementing central venous catheter (CVC) care bundle, which includes hand hygiene, maximal barrier precaution, chlorhexidine skin antisepsis, optimal catheter site selection avoiding femoral site, bundle checklist to supervise catheterization procedure, daily review of line necessity with prompt removal of unnecessary lines. These bundle cares were proved to be effective to significantly reduce the CLABSI incidence.

Methods: The study described the processes and results of implementing the CVC care bundle from March 2013 to May 2014 in an 1800 beds medical center in northern Taiwan. The CLABSI was collected and compared between pre-intervention phase (March 2012–February 2013) and post-intervention phase (March 2013–May 2014). We organized a special cross-functional team chaired by associate superintendent of the hospital and developed the CVC cart. We also held CVC care bundle educations for all healthcare workers. Audit teams were set and compliance of bundle elements were monitored.

Results: After using CVC care bundle elements and equipment, combined with monthly review and weekly audit of the healthcare workers' compliance, the daily assessment compliance rate rose from 60% to 95% in doctor and maintained 95% and above in nurse. The number of CLABSI dropped from 172 to 137, and the CLABSI incidence rate decreased from 11.47‰ to 6.88‰ ($p < 0.001$). By the result, we can predict that 192 cases were reduced, and about NT\$14 million was saved.

Conclusions: Implementing CVC care bundle is an important and effective medical practice for patients' safety. It also significantly reduces the incidence of CLABSI. Therefore, the CVC care bundle is indeed feasible and effective.

PS 1-111

HAND HYGIENE COMPLIANCE IMPROVEMENT USING THE WHO MULTIMODAL HAND HYGIENE IMPROVEMENT STRATEGY IN SILOAM HOSPITALS SURABAYA INDONESIA

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Purpose: To Improve HH compliance among HCW in Siloam Hospitals Surabaya from 72,9% to reach WHO standard of 85%.

Methods: Programs based on the WHO Guidelines on Hand hygiene in Health Care 2009 General strategies including Executive Sponsorship, Lead Coordinator, Team & Project Implementation Plan : 1) **System Change Initiatives.** HH policy, Ward infrastructure survey every 6 month, Budget for the continuous procurement of HH product, Evaluation of tolerability and acceptability of Alcohol based handrub. 2) **Training and education.** Mandatory training for all professional categories: Regular training for medical, nursing staff and all professional every 6 month, Commencement of all employment in induction program training, Visiting Physician in hospital events: Doctor forum, AB stewardship case study, Training & Education module, System to evaluate & validate the implementation of HH training education program : portfolio, sticker in staff's ID card. 3) **Evaluation and feedback.** HH audit compliance report: Monthly in Executive Committee, and Quality Indicator Patient Safety Goals in Coordination Meeting. Every 3 months in IC team meeting and 6 months in IC Committee. External audit by: ISO:9001 annually, Global Quality Development annually. 4) **Reminders in the workplace.** Posters in public area, corridors and point of care, paging system, screen saver, finger print attendance machine with HH reminder, IPSG Video, HH Leaflet ,HH Apron. 5) **Institutional Safety Climate for HH.** CEO supports: Commitment with official letter, Quality Improvement program across Siloam Hospitals, Dashboard report Siloam Hospitals, Key performance indicator for HCW, and HH Surveillance.

Results: HH Compliance after using WHO Multimodal HH Improvement Strategy was increased 72,9% (2009) up to 98,7% (Jan–Sept, 2014).

Conclusions: Increased HH compliance can be achieved through supports from Hospital Leaders and Implementation of WHO Multimodal HH Improvement Strategy.

PS 1-112

COMPARISON OF THE DISINFECTION EFFICACY BY HYDROGEN PEROXIDE DRY-MIST WITH BY 0.5% CHLORINE-BASED SOLUTION FOR ENVIRONMENTAL CLEANSING

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Purpose: Environmental cleanliness is one of the key elements to provide safety care in hospital settings. A medical center in northern Taiwan has implemented Level I program using chlorine-containing disinfectant for environmental cleansing. We also introduced the hydrogen peroxide dry-mist disinfection system and performed environment cultures in order to compare the disinfection ability between the two systems.

Methods: We selected two surgical operation rooms with different type of operations to perform this study. On the day before May 1, 2014, routine environmental cleansing with 0.5% chlorine was performed in both rooms by trained cleaning staff. The next day morning, we collected 50 swab samples (25 for each room) from environmental surfaces including equipment, and any places which may be overlooked under routine process. All 50 sampled locations were tagged for subsequent comparison and sampling. Then hydrogen peroxide dry-mist system was implemented in both rooms according to the manufacturer's guidance. After completion of disinfection, we collected the 50 swab samples adjacent to the locations marked by previous tags. All swabs were be cultured to check the bacterial load. Culture positive rate (%) was used as a performance indicator to assess disinfection efficacy between the two methods.

Results: Overall, before disinfection with hydrogen peroxide dry-mist system, 27 (54%) of 50 samples obtained from both rooms were positive for bacterial growth. After disinfection, 2 (4%) of 50 samples were positive ($p < 0.001$). Before disinfection, the rate between the two rooms were not significantly different (16/25, 64% vs. 11/25, 44%; $p = 0.156$). The positive sites were mainly door handles, chairs, keyboards, and grips of equipment, which may be frequently touched by staff. Relative pathogenic bacteria could be reduced significantly after disinfection (5/50, 10% vs. 0/50, 0%; $p = 0.025$) as well.

Discussion: Our study suggest that hydrogen peroxide dry-mist disinfection system is significantly more effective than 0.5% chlorine-based solution at decreasing bacterial load and apparently may decrease the risk of

healthcare associated infections. Hospital may perform hydrogen peroxide dry-mist disinfection in high-risk units to decrease bacterial contaminants and ensure patient safety as well as quality of care.

PS 1-113

THE EFFECT OF CENTRAL LINE INSERTION BUNDLE ON THE RATE OF CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTION

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Purpose: Knowledge about the impact of each central line insertion bundle on central line-associated bloodstream infection (CLABSI) is limited.

Methods: A quality-improvement intervention, including education, central venous catheter (CVC) insertion bundle, process and outcome surveillance have been introduced since March 2013. Outcome surveillances, including CLABSI per 1,000 catheter-days, CLABSI per 1,000 inpatient-days, and catheter utilization rates (days of catheter use divided by total inpatient-days), were measured. As a baseline measurement for a comparison, we retrospectively collected data from March 1, 2012 to December 31, 2012.

Results: During this 10-month period, there were a total of 687 CVC insertions, and 627 (91.2%) insertions were performed by intensivists. The rate of CLABSI significantly declined from 1.65 per 1000 catheter-day during the pre-intervention period to 0.65 per 1000 catheter-day post-intervention period ($P = 0.039$). CLABSI more likely developed in subjects in which a maximal sterile barrier was not used compared with subjects in which it was used ($P = 0.03$). Moreover, CVC inserted by non-intensivists were more likely to become infected than CVC inserted by intensivists ($P = 0.010$).

Conclusions: This multidisciplinary infection control intervention, including a central line insertion care bundle, can effectively reduce the rate of CLABSI. The impact of different care bundle varies, and maximal sterile barriers upon insertion as well as insertion by intensivists may be the most important factors for the prevention of CLABSI.

PS 1-114

EXPERIENCE OF IMPLEMENTATION CENTRAL VENOUS CATHETERS CARE BUNDLES IN MEDICAL AND SURGICAL WARD IN A REGIONAL HOSPITAL

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Purpose: Bloodstream infections (BSI) always lead to severe infection, high mortality and prolonged hospital. The central line-associated bloodstream infections (CLBSIs) have been shown can be improved through appropriate management of Central Venous Catheters (CVC) and bundle care implementation.

Methods: In April 2014, the related Medical and Surgical ward start promoting the program "CVC Bundle Care". This team composed of different departments, including the doctors, charge nurses, Quality Control Center, and infection control registered nurse. We implemented a multidimensional infection control approach that included: (1) define the checklists of CVC implantation and care content (2) education and training programs, (3) process surveillance, (4) feedback CLBSI rate to team member.

Results: The compliance rate of healthcare workers to 5-elements was 100% in September, 2014. CLBSIs were decreased from 1.71‰ in 2013 to 0.70‰ till September 2014. After the implementation started from April 2014, CLBSIs showed zero infection. The utilization of central lines were decreased from 15% in 2013 to 9.55% till September 2014.

Conclusions: The documentary shows that the enforcement of Bundle Care can cut down CLBSIs, which is the same result as ours. However, the collaborative care of medical team also 'plays a crucial role. The bundle care for central-line is effective to reduce the infection, and it will also decrease the length of hospitalization.

PS 1-115

ENHANCING CARE QUALITY OF CENTRAL CATHETERIZATION USING TRM: AN EXPERIENCE FROM A REGIONAL HOSPITAL IN NORTHERN TAIWAN

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Subjective: The rate of central catheterization usage in our adult ICU dropped in the past from 47.6% in 2011 to 40.9% in 2012. In the same time, the CA-BSI relevant infection density dropped from 5.42% in 2011 to 4.08% in 2012. Both indexes were decreased, though not as significant as desired.

Methods: We standardize the care procedure for central catheterization by providing, constructed an online platform for information lookup and consultation and engaged our hospital staff with educational trainings. We completed the Information systems for invasive lines care bundle, and participated in activities relevant to the care of central catheterization. We advertized the importance of standardized procedures by placing reminder messages and instructions in various locations across the hospital. We audited for the realization of CVC insertion and care bundle. The infection control practitioner analyzed data and examined CUS events in monthly CVC meetings and ICU quality-promoting meetings.

Results: It has succeeded in lowering the rate of central catheterization usage at ICU from 40.1% (from 2013/01 to 2014/03) to 35.3% (from 2014/04-2014/08), and the rate of infection of central catheterization at ICU from 4.47% to 2.50% with a success rate of 44%. It has also lowered number of infection of central catheterization in the general ward from 10 (in average 0.7 cases/month) to 1 (in average 0.2 cases/month) with a success rate of 71%.

Discussion: The acknowledgements and execution of the consensus operating procedure by every clinical staff in the hospital is the key towards the ultimate goal of zero infection for the care of central catheterization.

PS 1-116

REDUCING VENTILATOR-ASSOCIATED PNEUMONIA IN THE SURGICAL INTENSIVE CARE UNIT BY BUNDLE CARE STRATEGY

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Purpose: Ventilator-associated pneumonia (VAP) is an important and critical healthcare-associated infection. In addition to increase patients' mortality and length of hospital stay, prolonged use of antibiotics for VAP can increase drug-resistant pathogens. Bundle care strategy has been proved to have benefit for reducing healthcare-associated infection. This study showed that VAP can be reduced after intervention of bundle care strategy in the surgical intensive care unit (SICU).

Methods: Based on VAP care bundle strategy recommended by Infection Control Society of Taiwan, we performed bundle care in the SICU from August 2013. The five axis of bundle care included check the necessity of retention of endotracheal tube per day, reducing sedation agents to awake patients once per day, care of oral hygiene every 8 hour per day, elevation of head of bed more than 30 degrees for bedridden patients, and check cuff of endotracheal tube and emptying ponding water in conduits of ventilators. During the duration of VAP care bundle strategy, the team members hold meetings to discuss condition of execution of strategy and check incidence density of VAP per month. In addition, they reported the progress of VAP bundle care in the Infection Control and Medical Quality Committees.

Results: Before VAP care bundle strategy, the incidence density of VAP in the SICU was 11.53‰.

In August 2014, the incidence density of VAP in SICU reduced to 3.2‰.

Conclusion: VAP can be reduced effectively by team work-based VAP care bundle strategy and periodic review.